

# Memorandum

**Date:** October 25, 2002  
**Telephone:** (916) 651-8853  
**File:** Salton Sea Unit 6 Geothermal

**To:** William J. Keese, Presiding Member  
Robert Pernell, Associate Member

**From:** California Energy Commission      Robert Worl,  
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**Subject:**      SALTON SEA UNIT 6 GEOTHERMAL PROJECT (02-AFC-2) – ISSUE  
IDENTIFICATION REPORT

Attached is the staff's Issue Identification Report. This report serves as a preliminary scoping document as it identifies the issues the Energy Commission staff believes will require careful attention and consideration. However, this report may not include all the significant issues that may arise during the case, as discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. Energy Commission staff will be prepared to discuss the Issue Identification Report at the Informational Hearing, which is tentatively scheduled for November 19, 2002.

The Energy Commission is reviewing the Salton Sea Unit 6 geothermal power project pursuant to the 12-month Application for Certification (AFC) process. Staff has included its proposed schedule as part of this report.

Attachment  
cc: Proof of Service List

RW:ah

# **ISSUE IDENTIFICATION REPORT**

## **SALTON SEA PROJECT**

**(02-AFC-2)**

**CALIFORNIA ENERGY COMMISSION**

**Systems Assessment and Facilities Siting Division**

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## **PURPOSE OF REPORT**

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This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the potential issues that have been identified in the case thus far. Issues have been identified as a result of discussions with federal, state, and local agencies, and our review of the Salton Sea Unit 6 Geothermal Project Application for Certification (AFC), Docket Number 02-AFC-2. This Issue Identification Report contains a project description, summary of potentially significant environmental issues, and a discussion of the proposed project schedule. The staff will address the status of potential issues and progress towards their resolution in periodic status reports to the Committee.

## **PROJECT DESCRIPTION**

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The Salton Sea Unit #6 (SSU6) Project site is in the Imperial Valley, approximately 1,000 feet southeast of the Salton Sea, within the unincorporated area of Imperial County, California. The region is characterized mostly by agriculture and geothermal power production. The immediate project vicinity is dominated by agriculture. The town of Niland is approximately 7.5 miles to the northeast and the town of Calipatria is approximately 6.1 miles to the southeast of the plant site. The Sonny Bono Salton Sea Wildlife Refuge Headquarters is approximately 4,000 feet from the plant site. The Alamo River and New River are approximately 4.8 miles southwest and 2.7 miles east of the plant site, respectively. Nine geothermal power plants are within a 2-mile radius of the proposed plant site. These are represented by the triangles on the attached area map. (See attached Project Description, Figure 2. Map.)

The proposed project is a 185-megawatt (MW) net geothermal power plant consisting of a geothermal resource production facility (RPF), a merchant geothermal steam-powered generation facility (PGF), and associated wells, pads and pipelines. The SSU6 Project would be owned by CE Obsidian Energy LLC (CEOE), and operated by an affiliate of CEOE. The transmission lines would be owned and operated by the Imperial Irrigation District (IID). The location and the configuration of the plant have been selected to best match operating needs and the available geothermal resource. The project is in the Salton Sea Known Geothermal Resource Area (KGRA). Currently 4,808 acres of the 102,887 resource acres of the Salton Sea KGRA are developed. That developed acreage supports the generation of approximately 350 gross MW. The proposed SSU6 Project would add 3,180 resource acres to development to support the 185 net MW of additional electric power generation.

The proposed power plant would be located on approximately 80 acres of a 160-acre parcel. The construction laydown and parking areas would occupy approximately 24 acres immediately adjacent and south of the plant site. A switchyard/substation may also be constructed immediately south of the power plant site. The proposed site is currently agricultural land. The site elevation is approximately 228 feet below sea level

The project is within the area planned for development of geothermal resources and geothermal power plants by Imperial County. A Geothermal and Transmission Element was adopted in 1977 and incorporated into the County's General Plan, and has been amended and updated as appropriate. The County regulates the use of land for geothermal purposes through zoning and local land use permits. The Land Use Ordinance includes a Geothermal Overlay Zone, which includes the area of the proposed project site, pipelines, well pads and transmission lines.

The SSU6 Project would require an average of 293 acre-feet per year (afy) of water when operating at full plant load for uses including dilution of the spent geothermal brine for reinjection, potable water, and to supplement the water from steam production intended as the primary source of cooling water.

Electricity generated by the project would be delivered to an existing IID electrical transmission line (L-Line), via a proposed 161 kV L-Line Interconnection. Additionally, the proposed IID Midway Interconnection Line will connect to the existing IID Midway Substation east of the project site. The proposed transmission conductor pole heights will be between 100 and 125 feet. CEOE has contracted over 85 percent of the plant output with the IID for a period of 20 years following project completion. The remaining energy will either be sold to the California Independent System Operator (ISO) or contracted to third parties via the IID.

The project would be composed of a resource production facility (RPF), a power generation facility (PGF), and ancillary facilities. The RPF would include all the brine and steam handling/polishing facilities from the production wellheads, through the crystallizer/clarifier system, to the injection wellheads. The fluid would flow through above-ground pipelines to the steam handling system where the steam would be separated from the fluid (flushed) at successively lower pressures to produce high, standard, and low pressure steam for use in the condensing steam turbine generator located at the PGF.

The process would also include a handling system for brine solids processing, and a brine pond. Geothermal fluid would be produced from 10 production wells located on five well pads near the power plant. Chemically stabilized brine would flow from the steam handling system into the solids handling system where solids are removed, after which the brine would be suitable for injection through seven brine injection wells. All production and injection wells would be permitted and operated in accordance with California Division of Oil, Gas, and Geothermal Resources regulations.

The PGF would consist of one geothermal power block to produce the power. Additionally the PGF would contain the gas removal and abatement systems, and the heat rejection system. The PGF also may include a 161 kV switchyard and several power distributions centers. Common facilities would include a control building, a service water pond, and other ancillary facilities. Heat rejection for the steam turbines would be accomplished with a counterflow-cooling tower with splash-type fill. Cooling water would be supplied primarily from condensation at the steam production process, and if necessary, supplemented with fresh water.

The facility would be operated in a base-load mode 8,000 hours per year or more. Construction and startup of the power plant from the start of site mobilization to commercial operation is expected to take at least 20 months.

Permitting for a geothermal power project differs from other thermal power projects. As stated in the Warren-Alquist Act wells, transmission lines and related facilities are not “appurtenant facilities” for Energy Commission permitting (Public Resources Code section 25120). In the Salton Sea case the Department of Oil, Gas, and Geothermal Resources retains permitting authority over the production and injection wells, and Imperial County retains permitting authority over the well pads, and the production and injection brine pipelines.

## **POTENTIAL MAJOR ISSUES**

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This portion of the report discusses the potential issues the Energy Commission staff has identified to date. This report may not include all the significant issues that may arise during the case, as discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. The identification of the potential issues contained in this report is based on our judgement of whether any of the following circumstances will occur:

- significant impacts may result from the project which may be difficult to mitigate;
- the project as proposed may not comply with applicable laws, ordinances, regulations or standards (LORS); or
- conflicts may arise between the parties about the appropriate findings or conditions of certification for the Commission decision that could result in a delay to the schedule.

The following table lists all the subject areas evaluated noting those areas where potential significant issues have been identified. The table also shows which technical areas are currently preparing data requests. Even though an area is identified as having no potential issues, it does not mean that an issue will not arise related to the subject area.

<b>Subject Area</b>	<b>Potential Issue</b>	<b>Data Requests</b>
Air Quality	Yes	Yes
Biological Resources	No	Yes
Cultural Resources	No	Yes
Reliability/Efficiency	No	No
Facility Design	No	No
Geological/Paleontological Resources	No	Yes
Hazardous Materials	No	Yes
Land Use	No	Yes
Noise	No	No
Public Health	No	Yes
Socioeconomics	No	Yes
Traffic & Transportation	Yes	Yes
Transmission Safety and Nuisance	No	No
Transmission System Engineering	No	Yes
Visual Resources	No	Yes
Waste Management	No	No
Water & Soils	No	Yes
Worker safety	No	No

## **AIR QUALITY**

As a geothermal project, this project has numerous emission sources associated with construction, development of the well field, and operation of the power plant that differ considerably from the natural gas-fired plants that have come before the Energy Commission in recent years. Staff will require time to adequately address all possible emission sources, ascertain the possible air quality impacts and determine the appropriate mitigation.

### ***PROJECT IMPACTS AND ADEQUACY OF MITIGATION***

The applicant has identified a number of project operations, either temporary or more long term, that have potentially significant air quality impacts. The applicant's modeling analysis indicates potentially large impacts on the state 24-hour and annual average PM10 standards, the federal annual average PM10 standard, the state 1-hour H2S standard and the state 1-hour NO2 standard. Staff will evaluate modeling files to validate these impacts. If these impacts are considered significant, staff will have to address whether the mitigation proposed will adequately mitigate the project's potential impacts.

### ***AMMONIA EMISSIONS***

Ammonia is a component of the geothermal brine, and is contained in the steam condensate as a non-compressible gas. Some ammonia will be vented during well flow-testing, injection well operation, and through cooling tower operation. Table 5.1-26 in the AFC indicates an annual ammonia emissions rate of 2,681 tons per year during

normal operations. Section 5.1.2.3.1 indicates that the “annual ammonia emission rates are based on annual average conditions.” It is not explained what maximum and minimum emissions values are used to derive these average ammonia emissions. In addition, under certain conditions, ammonia emissions can contribute to ambient PM10 impacts. The applicant neither provided an analysis of the possible PM10 impacts (secondary PM10 formation) caused by ammonia emissions from the proposed project nor proposed mitigation for the ammonia emissions. Staff has prepared data requests regarding ammonia emissions.

### ***EMISSION OFFSETS***

The applicant discusses in a general way proposed controls on an existing geothermal project in order to provide H2S offsets. Additional information will need to be provided as to how they intend to reduce the existing project’s H2S emissions in order to generate an ERC. In addition, they intend to offset their PM10 emissions with ERCs from the District’s Bank. However, they have not identified specific ERCs they intend to use to offset (mitigate) the project’s PM10 emissions. Staff has prepared data requests regarding emission offsets.

### **TRAFFIC AND TRANSPORTATION**

The AFC does not provide data to support an analysis of the impact of truck traffic resulting from waste hauling during project construction and operation, and truck traffic resulting from deliveries during project operation. This truck traffic could have a significant effect on safety and the traffic levels of local roads and highways. Staff has prepared data requests regarding truck traffic.

### **SCHEDULE**

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Staff has begun its analyses of the project and is currently in the discovery phase. Staff is collecting information through data requests, workshops, agency consultations, and site visits, which will be utilized in its assessment of environmental and engineering aspects of the applicant’s proposal. Staff’s initial findings regarding the major issues discussed above, as well as other environmental and engineering findings regarding the project, will be presented in the Preliminary Staff Assessment (PSA). After filing the PSA, staff will conduct additional public workshops to discuss our findings, recommendations and proposed conditions of certification. Incorporating the input and information received during these workshops, staff will present final conclusions and recommendations in the Final Staff Assessment (FSA).

Following is staff’s proposed schedule for key events of the project. The ability of staff to be expeditious in meeting this schedule will depend on factors which include the applicant’s timely response to staff’s data requests, the filing of the Determination of Compliance from the air district, and comment from the Independent Systems Operator (Cal-ISO). Staff’s proposed schedule extends to the Pre-hearing Conference. Later events, such as the evidentiary hearings and issuance of the Presiding Member’s Proposed Decision, will be scheduled by the Committee.

## STAFF'S PROPOSED SCHEDULE FOR SALTON SEA UNIT 6

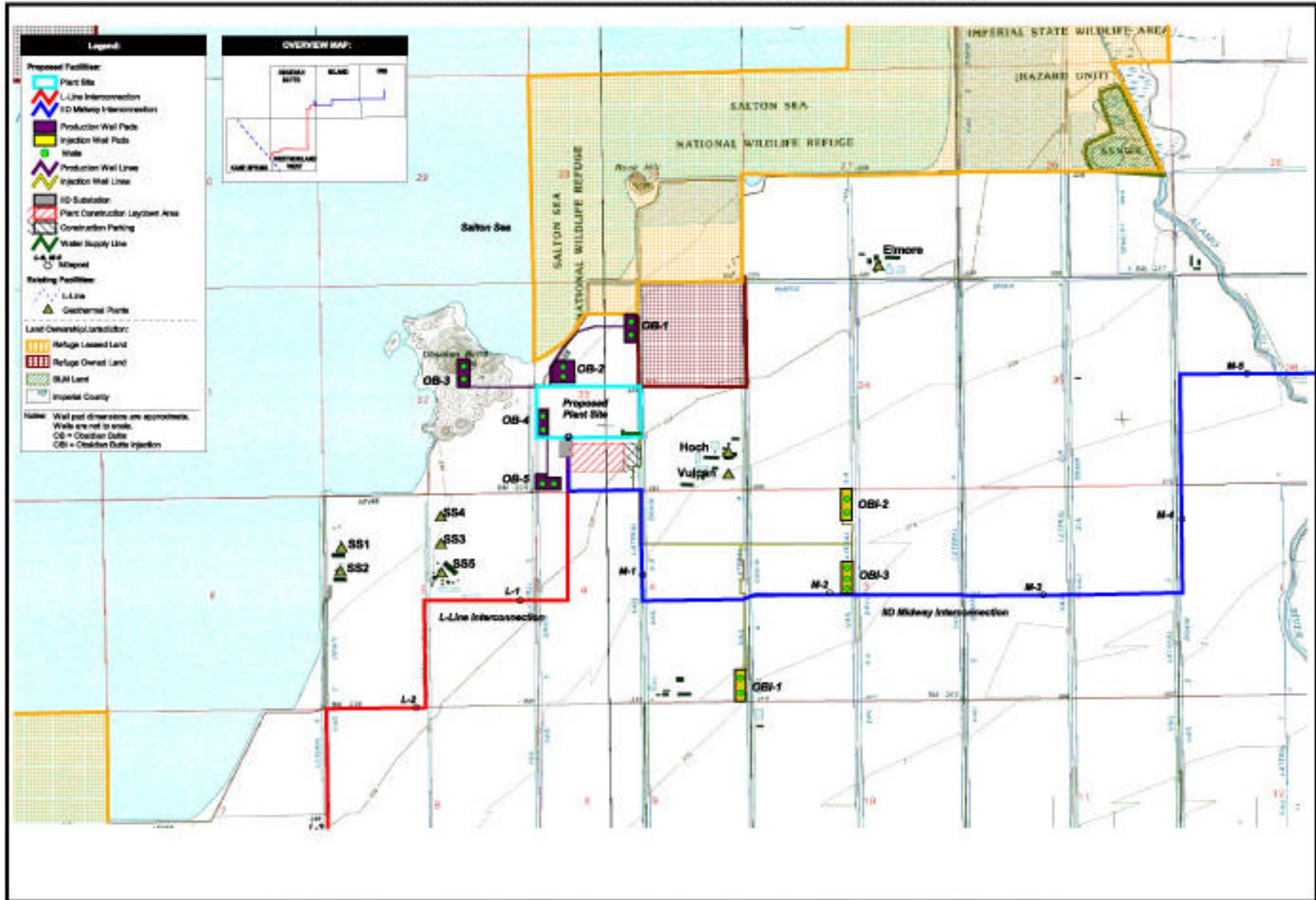
DATE	DAYS	EVENT
7/29/02	-	Salton Sea Unit 6 Geothermal AFC filed (02-AFC-2)
9/25/02	0	Energy Commission Deems AFC Complete for 12-month process
10/25/02	30	Staff files Issues Identification Report
10/28/02	33	Staff files Data Requests
11/19/02	55	Information Hearing & Site Visit
11/25/02	61	Data Responses Due From Applicant
12/4/02	70	Data Response and Issue Workshop
1/23/03*	120	Imperial County Air Pollution Control District (APCD) files Preliminary Determination Of Compliance (PDOC); Federal, State, Local Agency Preliminary Determinations
2/24/03	151	Staff files Preliminary Staff Assessment (PSA)
2/26/03	154	Staff holds PSA workshop(s)
3/25/03*	180	APCD files Final DOC U.S. Fish and Wildlife Service Issues Biological Opinion Federal, State, Local Agency Final Determinations
4/25/03	211	Staff files Final Staff Assessment (FSA)
5/5/03	221	Committee Prehearing Conference

\*Anticipated filing dates only

**PROJECT DESCRIPTION - FIGURE 2**  
**Salton Sea Geothermal Unit #6 Power Project - Jurisdictional Boundary Map**

OCTOBER 2002

PROJECT DESCRIPTION



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, OCTOBER 2002  
 SOURCE: AFC Figure 5.8-1B